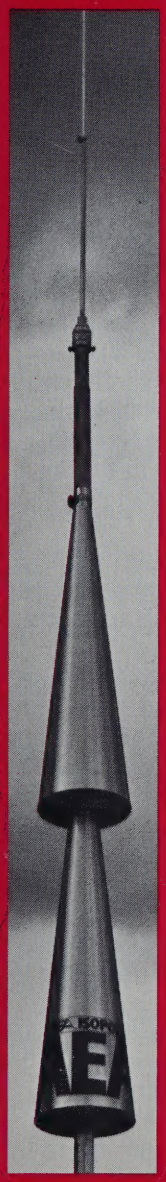
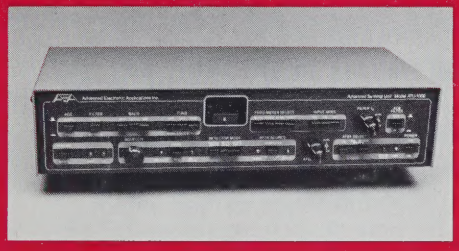




PRODUCT CATALOGUE

Advanced Electronic Applications, Inc.
P.O. BOX C-2160, LYNNWOOD, WA 98036

PKT-1
Packet Radio Controller

- **Digital Radio Communication — computer to computer**
- **Every PKT-1 station is a Digipeater (repeater)**
- **Multiple conversations on a simplex channel**
- **Send computer files error free**
- **Simple to use — 5 usual commands**
- **Only extra equipment required is RS 232 terminal/ computer and radio**
- **Customer's 9-15 VDC power allows mobile/portable operation**
- **1 year warranty and applications help**
- **No kit building — a complete Packet Controller**
- **Uses TAPR circuit and software**
- **Talk to more than 1000 stations on VHF, UHF, HF, Oscar, etc.**
- **110-9600 Baud operation**
- **AX.25 and VADCG protocols**
- **Packet Newsletter and HF information net available**
- **Built-in calibration — no test gear needed**
- **Comprehensive operator's manual (tech manual available)**
- **2 microprocessors allows non-interrupt operation**
- **Up to 64K on-board RAM/ROM for program/buffer/ message memory**
- **Easy hookup to radio and computer or terminal (4 wire MIC connector/RS232)**
- **Squelch input for busy channel Xmit inhibit**

The PKT-1 provides an easy way for the Radio Amateur, government agency, or small business to set up error free data or computer file communication links with hard copy capability. In this age of computers and data base access, dedicated phone lines are expensive and regular ones are slow. Digital radio provides an alternative, and is more reliable than phone in the event of an emergency.

A Packet Radio station sends a fractional second burst of AFSK/FSK encoded (ASCII, etc.) data and message handling bytes in a "packet". The receiving station PKT-1 decodes the packet and sends it to a terminal or computer via RS232 where it is displayed, printed, or stored for later use.

The PKT-1 was developed in conjunction with the Tuscon Amateur Packet Radio group. It is a fully assembled and warranted DC-operable version of the TAPR kit board.

The PKT-1 packet controller provides several differences when compared to voice, RTTY or AMTOR modes. There is the capability of hard copy, and data is essentially error free. Multiple conversations can exist on a single channel (time division multiplexing). Store-and-forward digipeating through up to 8 regular PKT-1 intermediate stations

allows VHF communication over non line-of-sight paths or paths too long for single hop VHF.

Packets sent by the PKT-1 are error checked using Cyclic Redundancy Check (CRC) in the PKT-1. Because of the burst nature of packet, packets from other conversations fit in before and after your packets, and you see only those addressed to you.

You may run modulation modes such as AFSK, FSK, PSK at HF, VHF, UHF, microwave and satellite frequencies. HF usually runs at 300 Baud, and VHF uses 1200.

The PKT-1 board contains a bypassable built-in Bell 202 style modem. It contains two processors, one of which encodes and decodes the packets. There is 32K of firmware, and 8K x 8 of static ram for buffering, as well as non-volatile ram for power-down storage of operating parameters. An RS232 interface is included, as well as sockets. The board is through-hole plated, nomenclated epoxy glass. Status LEDs and controls are on the front panel. Connection to the radio consists of PTT, audio in, and AFSK out. RS232 goes to the terminal or computer.

The PKT-1 will be supported as AEA and TAPR continue to improve the design. Applications assistance in getting started and operating is available to PKT-1 purchasers. There are over 1000 TAPR board owners now, with 20 users or so in a typical larger city, so there are plenty of people to talk to. You may subscribe to the Packet Status Register, a TAPR publication. There is also an HF voice net weekly with lots of operating hints.

Lots of bulletin boards exist, and you can leave or pickup your data and text messages, read information bulletins, and so forth. AEA can recommend terminal programs for your computer which will allow you to return to your station at day's end and read your mail.

The PKT-1 will input squelch info from your radio to inhibit xmit in the event the channel is busy with voice traffic. You may therefore coexist with voice traffic, (and on voice repeaters) with the operator's permission.

PKT-1 Rear View

MODEL PKT-1 PACKET CONTROLLER SPECIFICATIONS

Processors
- Motorola 6809 8 bit Microprocessor
- Western Digital 1933 HDLC (Highlevel Data Link Controller)

Input/Output
- RS232 (DB25S connector) serial port
  Baud rates: 50 to 19200
  Autobaud operation on 110, 300, 1200, 4800, 9600
- Power: see below
- PTT (push to talk) output for +PTT voltage radios
- Parallel Port (optional): 6520 PIA
- Audio In/loop thru output
- Squelch input for busy channel xmit inhibit

Memory
- ROM: 32K; 2764 program storage
- RAM: 8K; 6264 data buffer
- RAM: expandable to 32K
- NOVRAM: 128 bytes nonvolatile ram; Xicor 2212

Modem
- AFSK (1200, 2200 Hz), Bell 202
- 300 Baud HF, 1200 Baud VHF
- Onboard calibration routines
- Bypassable to use external modem
- Exar 2211 demod; 2206 AFSK generator; MF-10 4 pole switched capacitor filter

Protocols
- AX.25 and Vancouver VADCG, software switchable, full or half duplex radio data link

Operation Modes
- Command: accepts control commands via serial or parallel port
- Conversation: data input, packet T/R, editing (character/line/packet deletion, input redisplay)
- Transparent: digital data input, transmit via packet completion timer, receive packets, no editing

Controls
- Switches: power on, hard reset, NOVRAM bank select, NOVRAM disconnect

Indicators
- LEDs: power on, audio carrier, data carrier detect, PTT (push to talk), transmit data

Power
- Connector: 3.5 mm, center pin positive
- Voltage: 9-15 volts DC
- Current: 1 amp, fused at 2 amp
- Overvoltage: fuse blows at 18 v DC
- Optional Power Supply: AEA Model AC-4 1A DC
- Reverse polarity protected

Advanced Electronic Applications, Inc.
P.O. BOX C-2160, LYNNWOOD, WA 98036
(206) 775-7373 • Telex: 6972496 AEA INTL UW

MP-1 Micropatch

NEW

- **Morse, Baudot, ASCII, AMTOR**
- **Easy Hookup**
- **Automatic Treshold Correction**
- **Multistage Chebyshev Filters**
- **2125 Hz Mark**
- **2295, 2550, (or 2975) Hz Space**
- **750-900 Hz Cw**
- **Triple LED Tuning Indicator**
- **FSK or AFSK Output**
- **Positive PTT**
- **Plus/Minus CW Keying**
- **Scope Tuning Outputs Available**
- **Adjustable AFSK Output**
- **12 VDC Operation**
- **Small Size**

The MICROPATCH Model MP-1 Computer Interface is a complete modem unit for Morse, Baudot, ASCII and AMTOR use. It connects a communications transceiver with a computer and appropriate software for operating CW, Baudot, ASCII and AMTOR. The program is not contained in the MP-1, allowing you to use the MP-1 with any computer for which you can obtain software. AEA has programs for most popular computers and your AEA dealer can demonstrate them to you.

The MP-1 is housed in an attractive metal case, minimizing RF interference.

SPECIFICATIONS

Front Panel Controls/Indicators
- Triple Tuning LEDs
- Shift (170, Wide, CW) — Triple Pushbutton
- Power On/Off — Pushbutton
- Power Indicator — LED

Rear Panel
- Coaxial Power Connector — Center Pin positive
- TTL Computer Connector — 5 pin Molex
- CW Plus/Minus Keying Outputs — RCA Jacks
- FSK Output — RCA Jack
- AFSK Level Control — Screwdriver Pot
- Audio Input Connector — Miniature Phone Jack — 3.5 mm
- Audio Output Connector — Miniature Phone Jack — 3.5 mm
- Shielded Cable to Radio — 5 feet long/PTT and AFSK

Filters
- Two four-pole .5db ripple Chebyshev; Mark 2125/Space 2295, 2550 (or 2975, internally adjustable)
- CW Filter: 750-900 Hz
- Two Pole Post Detection Low Pass Filter

Input
- 0.1 to 5 V RMS, 10k ohms Input Impedance
- Computer I/O: Industry Standard 5 pin TTL
- Power: 12-16 VDC, 300 ma
  Optional AC-1 Supply or user supplied 12 VDC

Output
- AFSK 2125 Mark/2295 Space (Internally Adjustable)
  Amplitude: 5 to 100 mv, adjustable
  Impedance: 600 ohms
  Keying: Positive and Negative RCA Plugs
  FSK: Mark Low/Space High
  Scope: Internally available

Physical
- Metal Case, 1.5 x 7 x 6 inch, 18 oz.

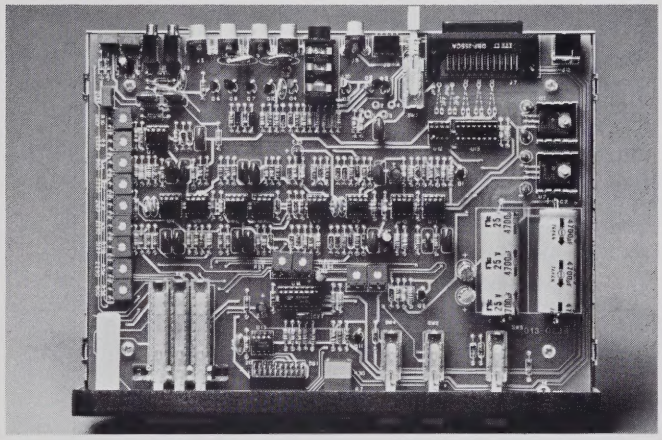
AEA Computer Patch™ Interface model CP-1

Now you can easily convert your personal computer and transceiver into a full-featured RTTY station with the CP-1 Computer Patch™ interface and software by AEA. The CP-1 is a professional quality RTTY/CW terminal unit which cuts no corners on sensitivity, selectivity, and reliability.

The CP-1 Computer Patch™ is easy for an inexperienced RTTY operator to hook up and operate, but is still very appealing to the more experienced and sophisticated RTTY user. The CP-1 is a moderately priced, high performance, full-featured terminal unit, which utilizes reliable innovative design in the style you have come to expect from Advanced Electronic Applications. It includes many extra features not offered in other popular units, yet is competitively priced.

With the tremendous price drop in personal computers, your total system cost is far below that of dedicated RTTY/CW systems.

The Mark and Space frequencies each have an active 4 pole filter to provide greatly improved performance compared to the popular single channel RTTY detectors. An easy to use AEA magic-eye bargraph tuning indicator gives fast and accurate CW and RTTY tuning. This indicator is ideal for RTTY and CW because it is within 10Hz, as accurate as scope tuning. In addition, there are separate Mark/Space scope output jacks provided. A state-of-the-art multi-stage active filter is incorporated, offering pre and post limiter filtering and floating reference comparator (automatic threshold correction) circuit, giving the best possible copy under weak and fading signal conditions. Additionally, the CP-1 offers variable shift tuning designed to move the space filter center frequency from 2225Hz to 3125Hz for shifts of 100Hz to 1000Hz. By varying the Q of the filter the bandwidth is constant. This design has the advantage of using a sharp filter which reduces the noise bandwidth significantly and allows the variable shift control to be used like passband tuning for extra elimination of adjacent channel interference. Coupled with the front panel Normal/ Reverse tone selector, the CP-1 has the capacity to decode virtually any tone shift in popular use today.



A sine wave generator is utilized for clean stable AFSK tone output to the transmitter. Both plus (+) and minus (−) keyed output jacks are provided for CW keying of virtually all popular transmitters. Automatic transmit/receive switching is available under computer control or from a front panel manual transmit button. Output and computer control signals are available in the usual TTL levels. The RS-232 input/output levels are available as an option.

Power requirements for the CP-1 are provided by a 117 VAC wall adaptor unit which is supplied. The CP-1 Computer Patch™ is housed in an attractive aluminum enclosure and is certified to comply with the limits for a class B computing device pursuant to subpart J of part 15 of FCC rules. The CP-1 measures 10″ wide x 2¾″ high x 8¼″ deep and weighs approximately 1½ pounds.

You can now experience the best RTTY, CW, and AMTOR offered. Couple the CP-1 with our new AEASOFT™ software packages designed for the MARS, SWL, or amateur radio operator. Feel a pride reminiscent of what "made in U.S.A." brought in years gone by. See your favorite dealer for a demonstration of the CP-1 today.

AEA Brings you the Breakthrough!

CP-100 Computer Patch

NEW

- **Morse, Baudot, ASCII, AMTOR**
- **Easy Hookup**
- **All shifts**
  170, 425, 850 Calibrated
  75-1000 Hz Adjustable
- **Filters**
  Dual Channel 4 Pole
  Constant Bandwidth
  Post Detection 5 Pole Lowpass
- **FSK, AFSK and Scope Outputs**
- **Key or Keyer Input**
- **Automatic Threshold Correction**
- **Input AGC**
- **Built-in Monitor Speaker**
- **Front Panel Squelch Adjustment**
- **Discriminator Style Tuning**
  All Modes
  Bargraph
- **Optional RS-232 and/or current loop**
- **Small Size**
- **12 VDC Operation**

The COMPUTER PATCH Model CP-100 Interface is a complete terminal unit for Morse, Baudot, ASCII and AMTOR. It will interface a computer running communications software via TTL levels (RS-232 optional) to your radio. AEA has software for most popular computers; your AEA dealer can demonstrate them to you. With the optional current loop provisions, the CP-100 can be used with a mechanical teleprinter also. The tuning indicator is a ten segment bargraph featuring discriminator-type operation which graphically shows selective-fading and is IDEAL for AMTOR use (tuning 'scope outputs are also available). The CP-100 also features a front panel squelch control which inhibits data to the computer when no signal is present (thus preventing print when receiving noise). Front panel selection of 110 and below or 300 baud operation is provided, along with an internal monitor speaker. The CP-100 is housed in an attractive metal case, minimizing any potential RF interference effects.

SPECIFICATIONS

Front Panel Controls/Indicators
- Bargraph Tuning Indicator — 10 segment — Discriminator Style
- Shift (170, 425, 850, CW) — Pushbutton
- Power On/Off — Pushbutton
- Power Indicator — LED
- Squelch
- Baud Rate Switch
- Delta Frequency Tuning (Variable Shift)
- Speaker Switch
- Manual Transmit Switch
- Mark/Space Inversion Switch
- Power Switch
- Power LED

Rear Panel
- Coaxial Power Connector — Center Pin Positive
- TTL Computer Connector — 5 pin Molex
- CW Plus/Minus Keying Outputs — RCA Jacks
- FSK Normal/Reverse Outputs — RCA Jacks
- AFSK Level Control — Screwdriver Pot
- Audio Input Connector — Miniature Phone Jack—3.5 mm
- Audio Output Connector—Miniature Phone Jack—3.5 mm
- Radio Cable Connector — PTT, AFSK — CB-4
- Scope Outputs (Mark/Space) — RCA Jacks
- Keying Input — 1/4 inch Phone Plug Jack
- Optional Current Loop Connector and RS-232 Connector

Filters
- Two four-pole (.5db ripple) Chebyshev Channel Filters
  Mark 2125; Space 2200 to 3125 Adjustable
  Shift Range 75-1000 Hz
- CW Filter — 750 Hz center, 180 Hz BW
- Five Pole Post Detection Low Pass Filter

Input
- 5 mv to 5 V RMS (Speaker off), 60db range, AGC
- 5 mv to 1.5 V RMS (Speaker on)
- 10 k ohms input impedance (Speaker off); 8 ohms (Speaker on)
- Computer I/O — Industry Standard 5 pin TTL RS-232 Optional

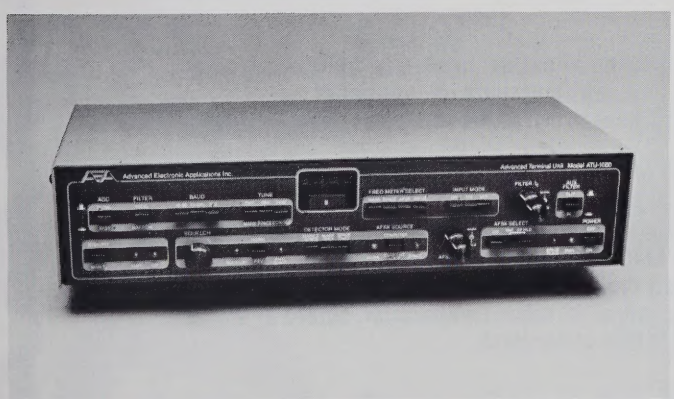
Power
- 12-16 VDC, 300 ma AC-1 Power Supply (Supplied)

Output
- AFSK 2125 Mark, 2295, 2250, 2975 Space for 170, 425, 850 shift
  Amplitude 5 to 100 mv, adjustable
  Impedance 600 ohms
- Keying: Positive and Negative RCA Plugs
- FSK: Open Collector - Normal and Reverse
- Scope: Mark and Space Filter Outputs
- PTT: Plus and Minus, Internally Selectable
- To Computer:
  Industry Standard 5 Pin TTL
  RS-232 Optional
- Current Loop 20 to 60 ma, optional

Physical
- Metal Case, 11 x 8 x 2.5 inch, 48 oz.

ATU-1000 Advanced Terminal Unit

- **Morse, Baudot, ASCII, AMTOR, PACKET (300 Baud HF) – Modem only**
- **Set Xmit or Receive Tones to 1 Hz! Range 1000-3000 Hz Independently Selectable**
- **All Shifts 170 Fixed 0-2000 Hz Adjustable**
- **Filters 32 Poles Total 8 Pole Input Bandpass Dual Channel (8 Poles/Active) Selectable Bandwidth Post Detection Dual 4 Pole**
- **Twin Full-wave Detectors**
- **Automatic single-tone fade operation**
- **CW Filter Adjustable between 700-2500 Hz**
- **Built-in Frequency Counter sets tones or filters**
- **FSK, AFSK and Scope Outputs**
- **Key or Keyer Input**
- **Automatic DC Coupled Threshold Correction**
- **Input Level 5mV-5V with selectable AGC time constant**
- **Front Panel Squelch Control and LED Indicator**
- **TTL Logic Inversion — Use "any" software program**
- **Bargraph Tuning All Modes Discriminator Style**
- **Built-in TTL, RS-232 and Current Loop I/O**
- **Easy Hookup**
- **19" Rack-Mountable Option**
- **13 VDC Operation — 110V Adaptor Supplied**



SPECIFICATIONS

Front Panel Controls/Indicators

- Bargraph tuning Indicator — 10 segment — Discriminator Style
- Shift (170, Variable, CW) — Pushbutton
- Power On/Off — Pushbutton
- Power indicator — LED
- Squelch
- Baud Rate (45-50, 75-110, 300)
- Concentric Filter and AFSK Frequency Set
- Manual Transmit Switch
- Mark/Space Inversion Switch
- Power Switch
- Power LED
- Mark/Space or Mark Only/Space Only Operation

Rear Panel Controls and I/O

- Coaxial Power Connector — 2.1 mm, center pin positive
- TTL Signal Connector — 5 pin Molex
- CW Plus/Minus Keying Outputs — RCA Jacks
- FSK Normal/Reverse Outputs — RCA Jacks
- AFSK Level Control — Screwdriver Pot
- Audio Input Connector — Miniature Phone Jack—3.5 mm
- Audio Output Connector—Miniature Phone Jack—3.5 mm
- Radio Cable Connector — PTT AFSK — RCA Jacks
- Scope Outputs (Mark/Space) — RCA Jacks
- Keying Input — 1/4 inch Phone Plug Jack
- Current Loop Connector
- RS-232 (DB-25) Connector

Filters

- Two Eight Pole .5db Ripple Chebyshev Channel Filters Mark or Space 1000-3000 Hz, adjustable or fixed 2125, 2295 Hz
  Shift Range 0-2000 Hz, adjustable or fixed
- 8 Pole CW Filter 700 to 2500 Hz, 100 or 180 Hz BW
- Two Post Detection Low Pass Filters; 4 Pole, 30, 75 or 200 Hz

Input

- 5 mv to 5V RMS, 60db Range, Single-ended, (optional 600 ohm balanced)
- AGC Time Constant:
  Fast (Baudot, ASCII, FEC AMTOR)
  Slow (CW, ARQ AMTOR)
- 10k ohms Input Impedance
- Computer I/O Industry Standard 5 pin TTL RS-232

Power

- 12-16 VDC, 500 ma, fused, reverse polarity protected
- Supplied AC-4 120 Volt Adaptor

Threshold Correction

- DC coupled (not affected by low keying rates)

Counter

- 4 Digit, LED display, 1 Hz Accuracy
- Sets Filter Center Frequencies, AFSK Output Frequencies and Measures Input Frequency (for precise tuning)

Indicators

- LEDs for Squelch, Anti-Space, CW keying, Transmit, Mark/Space, Power

Output

- AFSK 2125 Mark, 2295 Space for fixed 170 Shift
- Independently variable, 1000-3000 Hz, 1 Hz Accuracy
- AFSK Amplitude 5 to 100 mv, adjustable
- Impedance 600 ohms
- Keying: Positive/Negative, Open Collector, RCA Jacks
- FSK: Normal and Reverse, RCA Jacks
- Scope: Mark and Space Filter Outputs
- PTT: Plus or Minus
- To Computer: Standard AEA 5 Pin TTL — RS-232
- Current Loop

Physical

- Metal Case, 16 x 3.5 x 7.5 inch, 5 lbs.

AEA Announces:

A User-Friendly Software Package Designed For Easy Operation of Morse, Baudot, ASCII, and AMTOR.

MBA-TOR™

Now Available for the Commodore 64 and Vic-20 Computers.

MAIN MENU SCREEN

```
                                hh:mm:ss

MBA-TOR™
COPYRIGHT 1984 BY AEA

SELECT:
  M. MORSE
  A. ASCII
  R. RTTY
  T. AMTOR
  U. AUTO AMTOR
  X. AUTO CALL
  C. COMMANDS
  O. OPTIONS
```

Just Look At Some Of The Features:

- M. MORSE → CW receive and transmit at 5 to 99 wpm, auto speed track on receive.
- A. ASCII → 7 bit ASCII, receive and transmit at 110, 150 or 300 bauds.
- R. RTTY → 5 bit Baudot, receive and transmit at 60, 67, 75, 100 or 132 wpm.
- T. AMTOR → TOR, receive and transmit ARQ (Mode A) or FEC (Mode B) and listen.
- U. AUTO AMTOR → Beacon and WRU system, includes QRG check before XMT, won't QRM.
- X. AUTO CALL → Message forwarding system, AUTO-AMTOR still functions in this mode.
- C. COMMANDS → Selects command menu.
- O. OPTIONS → Selects options menu.

+ Complete precompose split-screen display with status information.
+ Complete printer control including SELCALL/WRU printer control.

OPTIONS MENU SCREEN

```
                                hh:mm:ss
  I. CALLSIGN          ??????
  S. SELCALL           ????
  T. ARQ TIMEOUT         30
  U. USOS                ON
  M. MORSE FILL (BT)     OFF
  R. RTTY SYNC (NUL)     OFF
  A. AUDIO FEEDBACK      OFF
  C. AUTO CR             ON
  L. AUTO LF             ON
  B. BEACON RECORD       OFF
  W. WRAP-AROUND         ON
  K. CW BREAK-IN         OFF
  O. OUTPUT MODE         WORD
```

- hh:mm:ss → 24-hour clock, shows time in hours, minutes and seconds.
- I. CALLSIGN → Allows entry of your callsign for auto operations.
- S. SELCALL → Derived from your callsign automatically, can be changed.
- T. ARQ TIMEOUT → Sets ARQ phasing calls from 1 to 99 seconds.
- U. USOS → Unshift on space, toggles on or off.
- M. MORSE FILL (BT) → Transmits Morse idle character during breaks in KBD activity.
- R. RTTY SYNC (NUL) → Transmits RTTY idle character during breaks in KBD activity.
- A. AUDIO FEEDBACK → Produces click in monitor audio when any key is pressed.
- C. AUTO CR → Sends carriage return the first space after 65 characters.
- L. AUTO LF → Sends a line feed after each carriage return.
- B. BEACON RECORD → Allows the beacon to be recorded to the QSO buffer for logging.
- W. WRAP-AROUND → Sends CR/LF if there is a space in the last 5 positions on the line.
- K. CW BREAK-IN → Automatic transmit/receive switching during QSO.
- O. OUTPUT MODE → Transmit in word mode (text sent on space) or character mode.

COMMAND MENU SCREEN

```
                                hh:mm:ss

  L. LOAD
  E. EDIT
  M. MOVE
  S. SAVE
  X. SET XMT BUFFER SIZE
  C. SET COLOR
  T. SET TIME
```

+ Break-in buffer on all modes, toggle QSO buffer on or off.
+ CW speed lock and Farnsworth low-speed CW.
+ 10 soft-partitioned™ message buffers plus direct from disk or tape.

- L. LOAD → Allows loading of message or QSO buffers from disk or cassette.
- E. EDIT → Word processor type edit functions on message and QSO buffers.
- M. MOVE → Allows transmission of QSO buffer without disk or cassette systems.
- S. SAVE → Allows you to save message and QSO buffers to disk or cassette.
- X. SET XMT BUFFER SIZE → Set the transmit pre-type buffer to any size you like.
- C. SET COLOR → Choose among any of 16 colors for character, screen or border.
- T. SET TIME → Lets you set the time of day clock.

+ Insert QSO station's call into any buffer while still copying.
+ Includes a complete manual, keyboard overlays and cables for any AEA Computer interface unit.

AEA Brings you the Breakthrough!

AEA Announces:

SWL-TEXT™

MORSE, BAUDOT RTTY, ASCII RTTY and AMTOR RTTY MODES Receive Only Software with Automated Features developed especially for the SWL Enthusiast.

MAIN MENU SCREEN

```
                    hh:mm:ss

SWL-TEXT™
COPYRIGHT 1984 BY AEA

SELECT:
 M. MORSE
 A. ASCII
 R. RTTY
 L. AMTOR ARQ
 F. AMTOR FEC
 C. COMMANDS
 O. OPTIONS
 T. TIMING ANALYSIS
```

Just Look At Some Of These Features:

- * CW receive speeds from 5 to 99 wpm, auto speed track and lock.
- * 7 bit ASCII speeds from 45 to 300 bauds, preset and user set speeds.
- * 5 bit Baudot speeds from 60 to 132 wpm, preset and user set speeds.
- * TOR, ARQ MODE L. Allows reception of ARQ transmissions.
- * TOR, FEC MODE B. Allows reception of FEC Broadcasts.
- * Selects COMMAND MENU.
- * Selects OPTIONS MENU.
- * Selects TIMING ANALYSIS ROUTINE, AUTOMATICALLY DETERMINES RTTY SPEEDS.
- \+ Complete split-screen display with status information.
- \+ Allows RUSSIAN RTTY Reception.
- \+ Allows RUSSIAN and JAPANESE MORSE reception.

TIMING ANALYSIS SCREEN

```
                    hh:mm:ss
TIMING ANALYSIS
SAMPLING DATA
I:0000000  T:1234567
(NOISE)  (POSSIBLY)
147 WPM  110 BAUD
ASCII
INVERTED

T. TIMING AGAIN
A. ALT. TIMING
B. BIT TEST
U. USE DATA
```

- * AUTOMATICALLY DETERMINES RTTY SPEEDS.
- * Indicates reception of data for BIT TEST.
- * Indicates bit inversion and transposition patterns from BIT TEST.
- * Indicates signal problems or non-standard data.
- * Speed of RTTY data in words per minute and bauds.
- * Indicates type of RTTY data, either ASCII or BAUDOT.
- * Indicates that the signal is NORMAL or INVERTED.

- * Allows the Timing Routine to be repeated.
- * Allows the use of an Alternative Timing Routine.
- * Samples data to determine bit inversion and transposition pattern.
- * Allows usage of Timing Analysis data with a single keystroke.
- \+ Complete Printer Control.
- \+ Complete Buffer Control.
- \+ CW SPEED LOCK for enhanced copy in noisy conditions.

COMMAND MENU SCREEN

```
                    hh:mm:ss

L. LOAD BUFFER
B. BROWSE BUFFER
E. EDIT BUFFER
S. SAVE BUFFER
T. SET TIME
C. SET COLOR
```

- * 24 hour clock, displays time in hours, minutes and seconds.

- * Allows loading buffer from either DISK or CASSETTE storage.
- * Allows viewing of buffer in text format, no control characters.
- * Word processor type edit functions on buffer, normal file display.
- * Allows you to save buffer data to DISK or CASSETTE storage.
- * Allows setting the time of day clock.
- * Choose among any of 16 colors for each, Character, Screen & Border.

- \+ Now available for the COMMODORE 64 and VIC-20 Computers.
- \+ Complete with cables for the AEA CP-1 or MP-1 INTERFACES.
- \+ Keyboard overlays and manual.
- \+ For more information, contact your AEA Dealer or AEA.

Brings you the Breakthrough!

AEASOFT™ Software for MORSE/BAUDOT/ASCII/AMTOR, MARS and SWL Users – Compatible with Commodore 64 or VIC-20

AEASOFT™ SOFTWARE FEATURES	MBATEXT™	MBA-TOR™	MARSTEXT™	SWLTEXT™
MORSE, BAUDOT, AND ASCII	YES	YES	YES	YES
AMTOR	NO	YES	NO	YES
PLUG-IN CARTRIDGE	YES	YES	YES	YES
RTTY & ASCII SPEED ESTIMATE	YES	YES	YES	YES
CW SPEED LOCK	YES	YES	YES	YES
CW AUTO SPEED TRACKING	YES	YES	YES	YES
FARNSWORTH LOW SPEED CW TX	YES	YES	YES	n/a
CW BREAK-IN MODE	YES	YES	NO	n/a
BREAK-IN BUFFER FOR MORSE, BAUDOT, AND ASCII	YES	YES	YES	n/a
TRANSMIT RX TEXT WITHOUT DISK OR CASSETTE	YES	YES	YES	n/a
TOGGLE QSO BUFFER ON OR OFF	YES	YES	YES	YES
WORD PROCESSING STYLE TEXT EDITOR	YES	YES	YES	YES
KEYBOARD OVERLAY INSTRUCTIONS	YES	YES	YES	YES
PRECOMPOSE SPLIT SCREEN	YES	YES	YES	n/a
WORD WRAP	YES	YES	YES	YES
TIME OF DAY CLOCK	YES	YES	YES	YES
WORD OR CHARACTER MODE	YES	YES	YES	n/a
PRINTER OUTPUT	YES	YES	YES	YES
DISK AND CASSETTE INTERFACE	YES	YES	YES	YES
UNSHIFT ON SPACE SELECTABLE	YES	YES	YES	YES
RTTY BLANK FILL	YES	YES	NO	n/a
MORSE BLANK FILL	YES	YES	NO	n/a
CW I.D. ON RTTY	NO	YES	NO	n/a
AUTO PUSH TO TALK	YES	YES	YES	n/a
ON SCREEN STATUS DISPLAY	YES	YES	YES	YES
SELCALL PRINTER CONTROL/WRU	NO	YES	NO	n/a
SAVE RX TEXT TO DISK OR TAPE	YES	YES	YES	YES
COLOR SELECT	NO	YES	NO	YES
INSERT QSO STATION'S CALL INTO ANY BUFFER	NO	YES	NO	n/a
10 SOFT-PARTITIONED™ MEMORY BUFFERS	YES	YES	YES	n/a
SELECTABLE LINE LENGTH	NO	NO	YES	n/a
AUTOMATIC MESSAGE STORAGE TO DISK	NO	NO	YES	NO
SPECIAL MARS PROTOCOLS (i.e. CR-CR-LF)	NO	NO	YES	n/a
AMTOR AUTO RESPONSE (UNATTENDED)	n/a	YES	n/a	n/a
AMTOR AUTO BEACON	n/a	YES	n/a	n/a
AMTOR AUTO CALL (MESSAGE FORWARD)	n/a	YES	n/a	n/a
TIMING ANALYSIS	NO	NO	NO	YES
KATAKANA MORSE	NO	NO	NO	YES
CYRILLIC MORSE	NO	NO	NO	YES
THIRD REGISTER CYRILLIC RTTY	NO	NO	NO	YES
BIT INVERSION & TRANSPOSITION DECODING	NO	NO	NO	YES

Compare These Features to the Competition

Please note that AEA Software for Commodore Computers is designed for use with Commodore Peripherals.

Software for Other Computers

For those individuals with personal computers other than Commodore, AEA has commissioned several independent programmers to develop and support a line of full-featured communication software programs for some of the most popular computers used by amateurs today.

While these programs were not designed in-house by AEA, they do meet our standards of acceptance for use with AEA amateur computer interfaces and are highly recommended for the non-Commodore computer user.

CP-1/APPLE-1

This software package includes a connecting cable to the AEA Computer Patch and the Apple computer I/O game socket. The software allows you to send and receive Morse and RTTY (in ASCII and Baudot). It features split screen operation, type ahead buffering, multi-speed operation, CW ID, retransmit capability, stored message retrieval from buffer or disk, stored keyword messages, text editing, a contact logging program, choice of word or character modes, choice of RTTY fill character, inverted RTTY operation, automatic return to receive mode upon end of transmission, automatic CR, LF, LTRS mode at the beginning of transmission or within the text and inverted stored text from disk.

CP-1/IBM-PC

HAMCOM is a complete ham communications program. This program is in compiled BASIC and requires an IBM-PC or IBM PCJR, DOS 1.1, 64k of RAM, a serial port and at least one double side disk drive. The terminal unit used with this package requires a serial RS-232 I/O port such as the RS-232 option for the Computer Patch™.

This software allows you to send and receive ASCII at 110, 300 or any other baud rates or combination of bits, bauds, parity, or stop bits allowed by DOS. Send and receive Baudot at 60, 66, 75 or 100 WPM and CW at any speed up to 100 WPM. You may split the screen in any ratio that you want. The windows are divided by a reverse video "status" line that shows code speed, TX or RX, local time and date, Zulu time, disk save and printer status, diddle and WRU setting. There is also a preview line that displays information for your review before insertion into the buffers. You can select any TX line width from 30 to 80 characters. RX and pre-composed text utilize the full 80 character width and feature automatic wrap around and end of line. Extra line feeds may also be ignored. There are ten message buffers of 256 characters in each code (total of 30). Both TX and RX text can be reused, deleted, and inserted anytime and anywhere in your text. It can also be saved to disk and/or printed. There are TX and RX "type ahead" buffers with virtually no limit in capacity. Transmitter control is automatic with the option to return to RX after end of TX. All signals and control I/O is via the 25 pin RS-232 connector. Complete instructions are on the disk and can be called from the main menu.

CP-1/H-89-1

This program is used for RTTY (in ASCII and Baudot) and Morse operation and is compatible with the Heath/Zenith H-89 computer. It has menu selectable modes and speeds with a tri-level split screen. The available ASCII rates are 100, 150, and 300 baud. Baudot speeds are 45, 50, 57, 100 baud and the CW speed will run up to 99 WPM.

The program features CW ID, type ahead buffering, multi-speed operation, message buffers, message retrieval from buffer or disk and word processor-like text handling.

Accessories

HOT ROD™ ANTENNAS FOR 2 METERS and 220MHz

The AEA HR-1 Hot Rod antenna is an end-fed halfwave dipole which is shorter, lighter, and offers more gain than a 5/8 wave HT antenna. Extended, the HR-1 gives typically 10db more gain than the popular "rubber duck" helical quarter wave antenna. Collapsed, performance is roughly equivalent to the "rubber duck". The SWR of an extended Hot Rod will be extremely low over the full two meter band and may be used as a 25 watt base station antenna with excellent results.

You will find the HR-1 out performs the popular 5/8 wave telescopic antennas when mounted on a HT and in many other installations as well. On a HT, it is 2.2 db better. Why does the half-wave HR-1 out perform a 5/8 wave? There are two basic reasons:

First: A 5/8 wave provides more gain than a 1/2 wave **if it is located directly over a flat, infinite ground plane.** Unfortunately, the HT is almost never located in such a way. As a result, the RF current in the antenna base (which is much larger in a 5/8 wave than a 1/2 wave) spills over onto the HT and the operator, causing them to become "part of the antenna". This current would normally flow onto the missing ground plane. The HT and the operator are "high impedance" and lossy compared to the ground plane and as a result the 5/8 wave antenna pattern is weak and distorted compared to ground plane operation. In contrast, the 1/2 wave feedpoint impedance is higher (1000 ohms compared to 50 ohms for 5/8 wave) and the RF antenna base current is much lower. Consequently, the spill over is lower and the need for a ground plane is lower. The HT and the operator have much less effect. Hence, the half-wave out performs the 5/8 wave.

Second: the lower 1/8 wave of the 5/8 carries an out-of-phase current compared to the top 1/2 wave. The field from the 1/8 wave subtracts from the main field, resulting in less gain. Why do manufacturers make 5/8 wave instead of 1/2 wave HT antennas? The matching network required for the mostly resistive 50 ohm feedpoint impedance of the 5/8 wave is much easier to make than that required for the 1000-1500 ohm feedpoint impedance of the 1/2 wave. AEA has solved the matching problem in the 1/2 wave very effectively, and at a breakthrough in cost. A matching network in the base of the HR-1 transforms the drive impedance to 50 ohms to match the transceiver. The resulting performance of the half-wave HR-1 Hot Rod antenna is significantly better than a telescopic 5/8 wave antenna.

The Hot Rod antenna is available for the amateur two meter band (HR-1), the commercial VHF business/marine band (HR-3) and the amateur 220 MHz band (HR-2).

PSK-1 POWER SPEAKER

The AEA model PSK-1 Power Speaker is made for applications requiring good communications quality audio from receivers that do not have enough audio output power or a large enough speaker. The PSK-1

will interface with virtually any receiver output impedance and deliver up to 2½ watts of audio power from a 4 inch 8 ohm speaker. The Power Speaker may be mounted with the metal bracket supplied or is light enough to be mounted with a few strips of Velcro. The PSK-1 operates from 12VDC at 500 ma (such as the AEA model AC-1 for base station use.) The PSK-1 is a perfect adjunct to the Doctor DX™ for use with CRT monitors having no audio amplifier and speaker.

AC-1

The AC-1 nominal 12VDC wall adaptor is a suitable power source for all AEA products requiring 12 VDC at 600 ma or less current. The AC-1 comes with a 6 foot power cord and a standard 2.1 mm (center pin +) coaxial power plug that mates with all the AEA products. The AC-1 can also be used for any load requiring filtered, but unregulated nominal 12 VDC at 600 ma or less.

AC-4

Same as AC-1 except 1 amp output.

DC-1

The DC-1 is a fused cable with a standard cigarette lighter plug on one end and a standard 2.1 mm (center pin +) coaxial power plug on the other end. The DC-1 offers mobile 12VDC operation for any of our keyers or trainers.

DQ-64
Doctor QSO™

Dr. QSO Cartridge Plugs into C-64 Expansion Port.

DOCTOR QSO RELIEVES ALL SYMPTOMS OF MORSE CODE PHOBIA! Doctor QSO™ is a plug-in cartridge for the Commodore 64 computer that provides a very realistic simulation of on-the-air two-way Morse Code ragchew contacts (QSOs). AEA, the undisputed leader in Morse training, has introduced Doctor QSO to amateur radio for the purpose of making Morse skill upgrading FUN and EASY. With Doctor QSO you can look forward to practicing your Morse Code skills in a non-confusing manner. Forget about all the drudgery you associated with Morse Code in the past; Doctor QSO ushers in a totally new era in Morse Code learning.

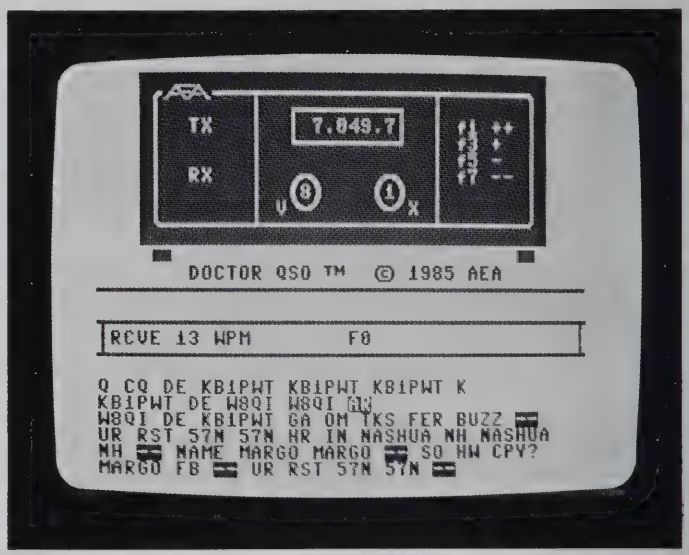
Doctor QSO is based on the same technology that has made the Doctor DX™ contest trainer so famous. The Doctor QSO simulator is so realistic that most skilled operators find it every bit as rewarding as the real thing. You can operate anytime you want; the only extra equipment you need is a Commodore 64 and a TV set.

DOCTOR QSO REMOVES THE MYSTERY OF THE *CODE BEHIND THE CODE.* Many people go so far as to learn the Morse Code characters, only to be frightened of getting on the air the first time because the QSO format is so confusing. With Doctor QSO, you will be a pro before you turn on your first transmitter. The Doctor QSO trainer/simulator is ideal for the aspiring Amateur Radio operator with little or no contact with helpful hams.

With Doctor QSO you will become familiar with all the U.S. call areas and associated call letter prefixes. The standard international QSO format is observed along with all the common amateur radio abbreviations which are explained thoroughly in the operator's manual. All Morse skill levels are addressed by Doctor QSO, from the person who has not yet learned the Code, to the person comfortable with sending and receiving at 40+ WPM.

WHO SAYS MORSE CODE CAN'T BE FUN? You can even have fun with Doctor QSO before you have learned the Code. To begin with, the operator can view the messages being sent by the computer generated stations in real-time. The operator can also send Morse with the keyboard. In addition, the operator can select simulation of static interference (QRN) and adjacent CW interference (QRM). Normally, the beginner would operate in the novice band where stations will be sending as slow as 3 WPM. Later as the user becomes more skilled, he can move down the band to faster speeds, and he has the choice of using a key or keyer for sending.

If you have tried every other method known to learn the Morse Code and failed, then Doctor QSO has just the prescription for you. Now you can upgrade your Amateur Radio license in record time. Doctor QSO is more than the written word can describe. To fully appreciate all the merits of this trainer, see your dealer for a demonstration.


TX
RX
7.049.7
DOCTOR QSO ™ © 1985 AEA
RCVE 13 WPM F0
Q CQ DE KB1PWT KB1PWT KB1PWT K
KB1PWT DE W8QI W8QI
W8QI DE KB1PWT GA OM TKS FER BUZZ
UR RST 57N 57N HR IN NASHUA NH NASHUA
NH NAME MARGO MARGO SO HW CPY?
MARGO FB UR RST 57N 57N

Dr. QSO Operating Display Showing Controls, Frequency Display and Morse Monitor Mode Enabled.

SPECIFICATIONS FOR THE DDX-64 OR DQ-64

IC complement: 7

Power Required: 5 volts at 100 mA (from C-64)

Dimensions: 4½ x 3½ x 1" (Projects 2⅝" behind C-64)

Weight: 3 oz.

RCA phono for keyer input

C-64 maximum audio output: 200 mVrms max, 1K ohm source impedance

Prices and specifications subject to change without notice or obligation.

DDX-64
Doctor DX™

Dr. DX Cartridge Plugs Into C-64 Expansion Port.

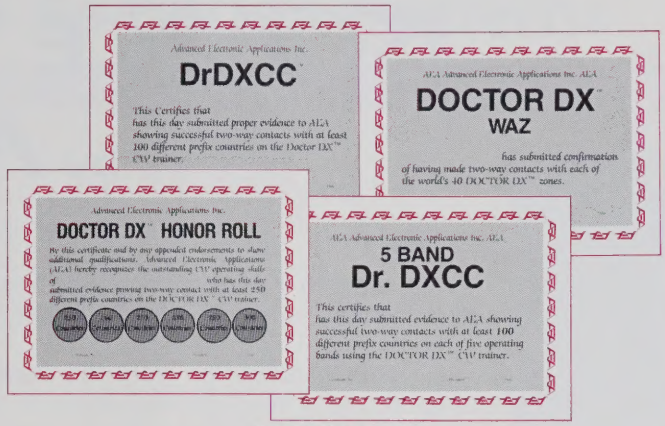
DOCTOR DX CAN OFFER MORE FUN THAN ACTUALLY BEING ON THE AIR. With the DDX-64 you can still work DX when the bands are dead, your antennas are down, TVI has you shut down, or when you are relegated to apartment living with no other ham gear. You can also enjoy the propagation that you would otherwise be deprived of because of working or sleeping schedules.

The DDX-64 takes all the mystery out of making CW contest contacts. It is easy to hook-up and operate and NO PREVIOUS COMPUTER KNOWLEDGE is NECESSARY. This is THE answer for those who have never felt comfortable making CW contacts on the air. You will even learn the actual DX call letter prefixes and associated CQWW zones plus the expected times and bands for working particular DX during the peak of the sunspot cycle.

GO ON A DXPEDITION TO ANY PART OF THE WORLD WITH DOCTOR DX. Have you ever wondered what it would be like to work CW DX from another part of the world with a well equipped station? Now you can with Doctor DX. You can go on a DXpedition without leaving the comforts of your own home and avoid all of the expensive travel costs. Experience the thrill every ham has dreamed of for a fraction of the cost of actually making the trip.

DOCTOR DX SIMULATES REAL CW BAND OPERATING CONDITIONS. All the stations you will work using Doctor DX are generated by the computer. As you tune up and down the particular band you have selected, you will hear realistic sounding stations in contact with other stations, plus QRM and QRN similar to actual on-the-air conditions. All call letters heard are totally random (subject to the country's callsign assignment rules), with the guarantee that for each of the 304 possible countries, there is at least one station represented. The speed of the stations operating in the lower band segments is much faster than those operating in the upper band segments and the "operators" are more polished.

DOCTOR DX IS THE ONLY ALTERNATIVE TO POOR REAL LIFE PROPAGATION CONDITIONS. The radio propagation programmed for each band represents what you would expect to hear on a good propagation day at

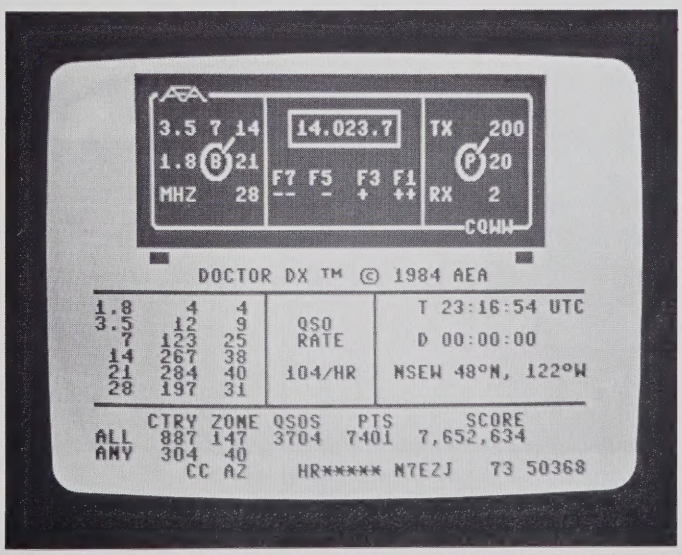


Dr. DX™ Awards.

the peak of the sunspot cycle with an omni-directional antenna. The propagation follows the internal real-time clock that you set before beginning operation. As an example, the 10 and 15 meter bands are wide open during local daylight hours and closed at night (and vice-versa for 80 and 160 meter bands). The simulated stations you hear (with proper prefixes) are at distances you would expect to hear under normal conditions for the time of day and band selected.

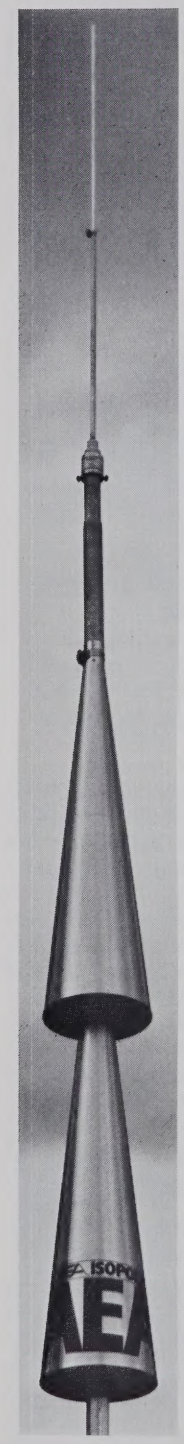
LEARN PROPER CW OPERATOR SKILLS WITH DOCTOR DX. The typical two-way contact exchange involves call letters, signal reports, and CQWW zones (all explained fully in the operator manual). If you miss any part of your QSO, you can ask for and receive a repeat. If you make a mistake, the other station may ask you for a repeat. You may even ask the other station to slow down (QRS) or speed up (QRQ) and he will. Learning proper contest operating procedures and technique is a natural with the DDX-64. Doctor DX will not reward bad operator habits. In fact, you can start practicing with the DDX-64 before receiving an FCC license. The DDX-64 is the ideal device for the ace contest operator to get into shape before the big weekend. If you do not have Doctor DX on your side, how would you like to compete with someone who "works out with Doctor DX" before the real contest weekend?

With adequate time spent on the DDX-64, you can become a successful DX and contest operator without the need for investing in expensive equipment on which to practice. AEA even offers award certificates to operators that work all zones, 100 countries, 5 band Dr. DXCC, or Doctor DX Honor Roll.



Dr. DX Operating Display Showing Controls, Frequency Display and QSO Progress Record.

ISOPOLE™ Antennas by AEA



ISO-144
ISO-220

MASTS
NOT SUPPLIED

The IsoPole has built a strong reputation for quality in design and superior performance. Patented IsoPole conical sleeve decouplers offer many design advantages.

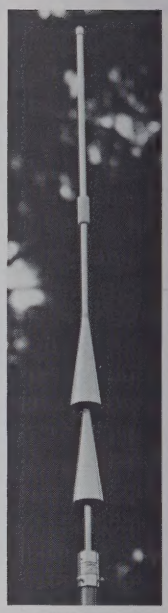
All IsoPole antennas yield the **maximum gain attainable** for their respective lengths and a zero degree angle of radiation. Exceptional decoupling results in simple tuning and a significant reduction in TVI potential. Cones offer greater efficiency over obsolete radials which radiate in the horizontal plane. The IsoPole is also more esthetically pleasing to the eye than older obsolete ground plane designs.

The IsoPoles have the broadest frequency coverage of any comparable VHF base station antenna. This means no loss of power output from one end of the band to the other when used with SWR protected solid state transceivers. **Typical SWR is 1.4 to 1, or better, across the entire band!**

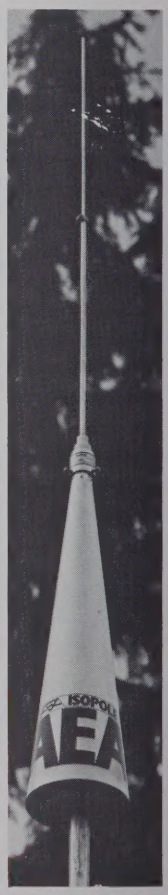
A standard Amphenol 50 ohm SO-239 connector is recessed within the base sleeve of all VHF IsoPoles and is fully weather protected. With the factory-tuned matching network located at this connector, we are able to cancel out the impedance lump effects of this so called "UHF" connector. The UHF IsoPoles use type "N" connectors. Additionally, all IsoPole antennas are D.C. grounded. With the IsoPole, you will not experience aggravating changes in SWR with changes in weather. The impedance matching network is weather sealed and designed for maximum legal power. A new insulating material offers superb strength and dielectric properties, plus excellent long-term ultra-violet resistance. All mounting hardware is stainless steel. The decoupling cones and radiating elements are made of corrosion resistant aluminum alloys. The aerodynamic cones are the only appreciable wind load and are attached directly to the support (a standard TV mast which is **not supplied**). The IsoPole has even survived 140 mph storms unscathed. You can buy a mast from your local hardware or Radio Shack store, for less than the shipping cost of a single 10′ mast!

Operating on MARS or CAP? The IsoPole and IsoPole Jr. antennas will typically operate at least ±2 MHz outside the respective ham band without retuning. However, by simple length adjustment, the IsoPoles can be tuned over a wider range outside the ham bands as shown in the SWR charts.

The IsoPole antennas are all impedance matched in the factory so that no field tuning is required. Instead of the typical 25-40 screws, the IsoPole has no more than 5 stainless steel screws to fasten, thereby significantly decreasing the time necessary for assembly and reducing the chance for errors.



ISO-440



ISO-144JR
ISO-220JR

ISOPOLE™ SPECIFICATIONS

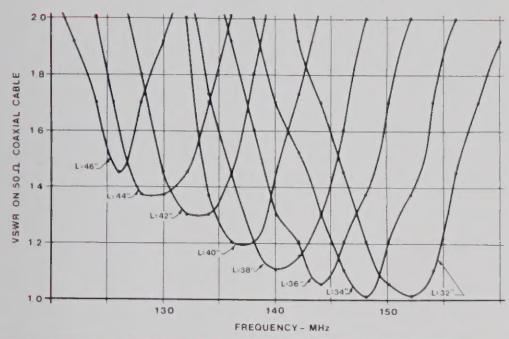
MODEL	144 SR	144 JR	220 SR	220 JR	440
Frequency Coverage (MHz)	135-160	135-155	210-230	210-230	415-465
2:1 VSWR bandwidth	> 12 MHz @ 146 MHz	> 10 MHz @ 146 MHz	> 15 MHz @ 220 MHz	> 12 MHz @ 220 MHz	> 22 MHz @ 435 MHz
Impedance	50Ω	50Ω	50Ω	50Ω	50Ω
Power Rating	1 kw	1 kw	1 kw	1 kw	1 kw
Gain	3 dbd	0 dbd	3 dbd	0 dbd	3 dbd
Length of radiating elements	125.5" (3.2m)	76" (1.9m)	79.25" (2m)	51.75" (1.3m)	46" (1.2m)
Wind Area*	< 1 sq. ft.	< .75 sq. ft.	< .75 sq. ft.	< .6 sq. ft.	< .20 sq. ft.
Maximum Mast OD	1¼" (32mm)	1¼" (32mm)	1¼" (32mm)	1¼" (32mm)	1¼" (32mm)
Maximum Mast Length**	8 ft. (2.4m)	3 ft. (1m)	5½ ft. (1.6m)	28" (.7m)	6" (150mm)
Weight (shipping)	5 lbs.	2 lbs.	4 lbs.	1¾ lbs.	2.5 lbs.
Coax Connector	PL 259	PL 259	PL 259	PL 259	Type N.

dbd — db gain over a dipole in free space
*estimated
**mast not included

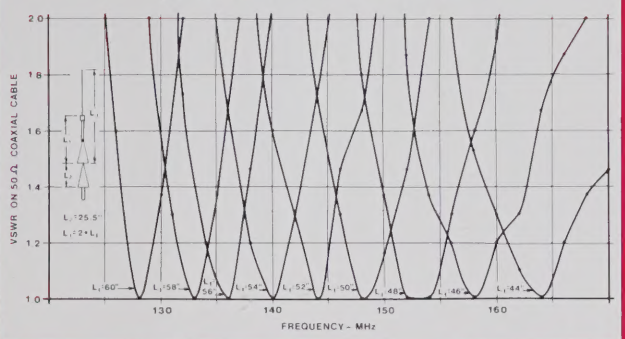
Specifications subject to change without notice or obligation.

ISOPOLE™ VSWR and Radiation Patterns

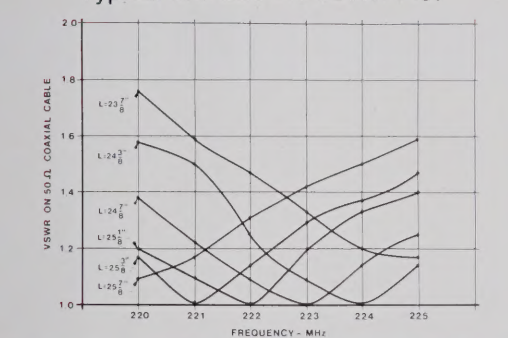
Typical ISO-144 JR VSWR Plot



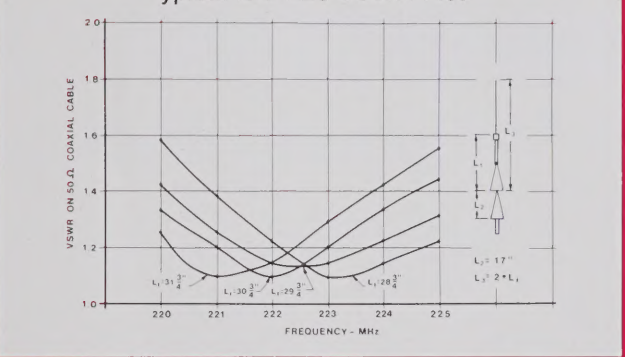
Typical ISO-144 VSWR Plot



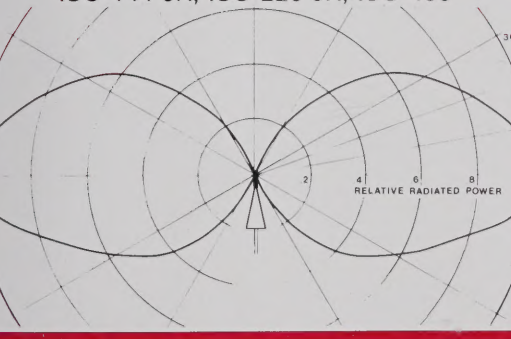
Typical ISO-220 JR VSWR Plot



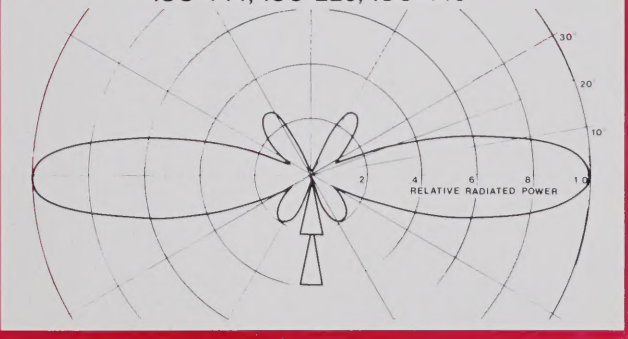
Typical ISO-220 VSWR Plot



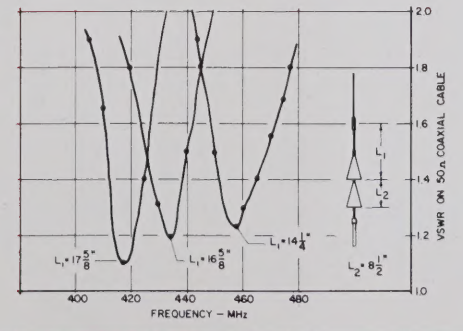
Typical Power Pattern
ISO-144 JR, ISO-220 JR, ISO-450



Typical Power Pattern
ISO-144, ISO-220, ISO-440



Typical 450 Mhz VSWR Plot



Advanced Electronic Applications, Inc.
P.O. Box C-2160 Lynnwood, WA 98036

Bulk Rate
U.S. Postage
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Permit No. 48

ADDRESS CORRECTION REQUESTED

TI-1 Tuning Indicator

- **True spectral display shows both mark and space tones**
- **10hz resolution for the tuning accuracy of a scope without the expense of a scope**
- **Allows fast and easy tuning of RTTY signals**
- **Ideal for difficult to tune AMTOR signals**
- **Displays 170, 425 and 850hz standard shifts**
- **Shows non-standard shifts for easy tuning**
- **High sensitivity (50 mv)**
- **Also indicates noise and upside-down signals**
- **Audio driven - easy hook up - compact size**
- **Built in speaker - can be switched on or off**
- **Works with any interface**
- **Does not require scope outputs**
- **Requires 12vdc at less than 60ma**
- **Complete with manual and connectors**

The TI-1 is a spectral display unit for tuning RTTY or ASCII signals. It presents a bargraph display of the two frequencies (mark, space) in the AFSK signal presented to your radio or received from the other station. The two frequencies are each represented by a lit bargraph segment(s). The operator tunes the radio such that the lit segments are positioned over panel cursor markings indicating the proper frequencies. Radio tuning is correct at that point.

Noise level problems can be diagnosed from the display, as well as improper shift and "upside-down" signals. Additionally you may tune AMTOR signals with the TI-1, and with simple resistor value modifications, you may use the TI-1 as a Packet Radio tuning indicator on either the HF or VHF (UHF) bands.

A speaker is included so you may monitor the audio. It may be turned off once you have your signal properly tuned.

The TI-1 operates from your station +12VDC supply. As an option you may purchase an AEA AC-1 wall adaptor power supply. The TI-1 connects to the audio line from your receiver speaker. An extra audio jack is provided for connecting to your computer interface.

SPECIFICATIONS

Input level: 50mv to 1v RMS
Monitor speaker: 8 ohms, 250mw
Power required: +13.5VDC ± 1.5VDC at 60 ma.
Display: 20 segment bargraph
Frequency ranges and resolution:

SHIFT	FREQUENCY RANGE	RESOLUTION
170 HZ	2093 - 2325 HZ	12 HZ
425 HZ	2050 - 2625 HZ	30 HZ
850 HZ	1975 - 3125 HZ	60 HZ

Size: 5.3" wide x 2.8" high x 1.8" deep
Weight: 11 oz.

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